MIAMI-SOUTH FLORIDA
National Weather Service
Forecast Office
http://www.weather.gov/miami

SOUTH FLORIDA WINTER 2021-2022 SUMMARY

Warmer than Normal Winter

Drier than Normal Interior/West & Wetter than Normal East

March 2, 2022: Another winter is in the record books, and it was another warmer than normal one across South Florida. It ranked among the top-10 warmest on record at 3 of the four main climate sites. January was the coolest month ending up near normal, but it was sandwiched between a warm December and February. More information in the temperature section below.

The large-scale weather pattern across North America and the western Atlantic Ocean reflected the temperature trends across Florida. A stronger-than-normal high pressure area aloft throughout most of December centered over the eastern United States blocked most cold fronts from making it through South Florida. This pattern persisted into the first part of January, then eventually gave way to a longwave trough pattern over the eastern U.S., allowing for cold fronts and intrusions of cold air to move into the South Florida region. The trough gradually lifted during the first week of Florida, to be replaced by a strong high pressure area over the western subtropical Atlantic and Florida which once again blocked most fronts from moving cleanly through the area.

Temperatures

Average winter temperatures were mostly 1 to 3 degrees above normal across South Florida (Figures 1 and 2).

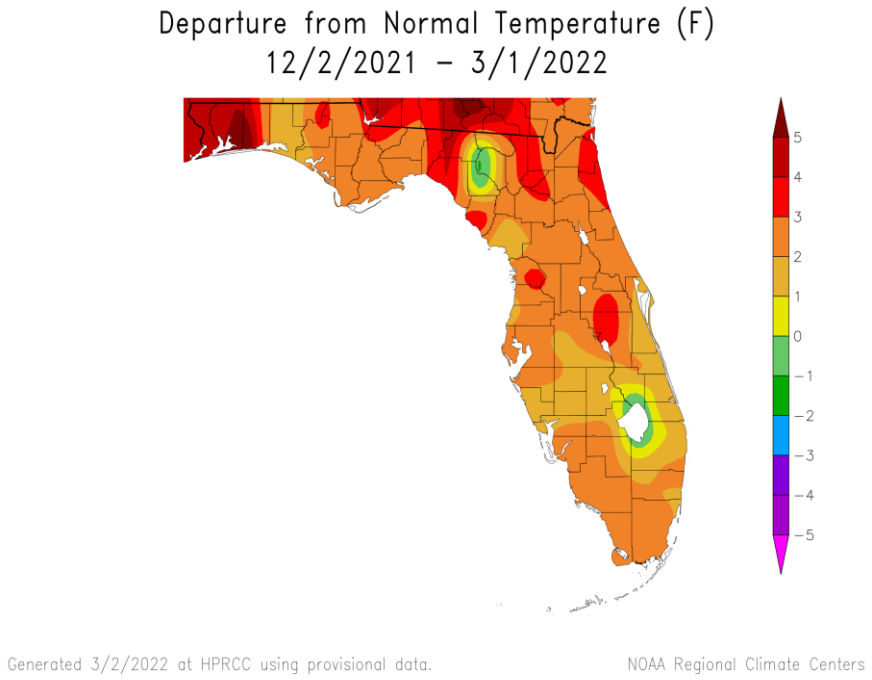


Figure 1: Temperature Departure from Normal across Florida for December 2020-February 2021

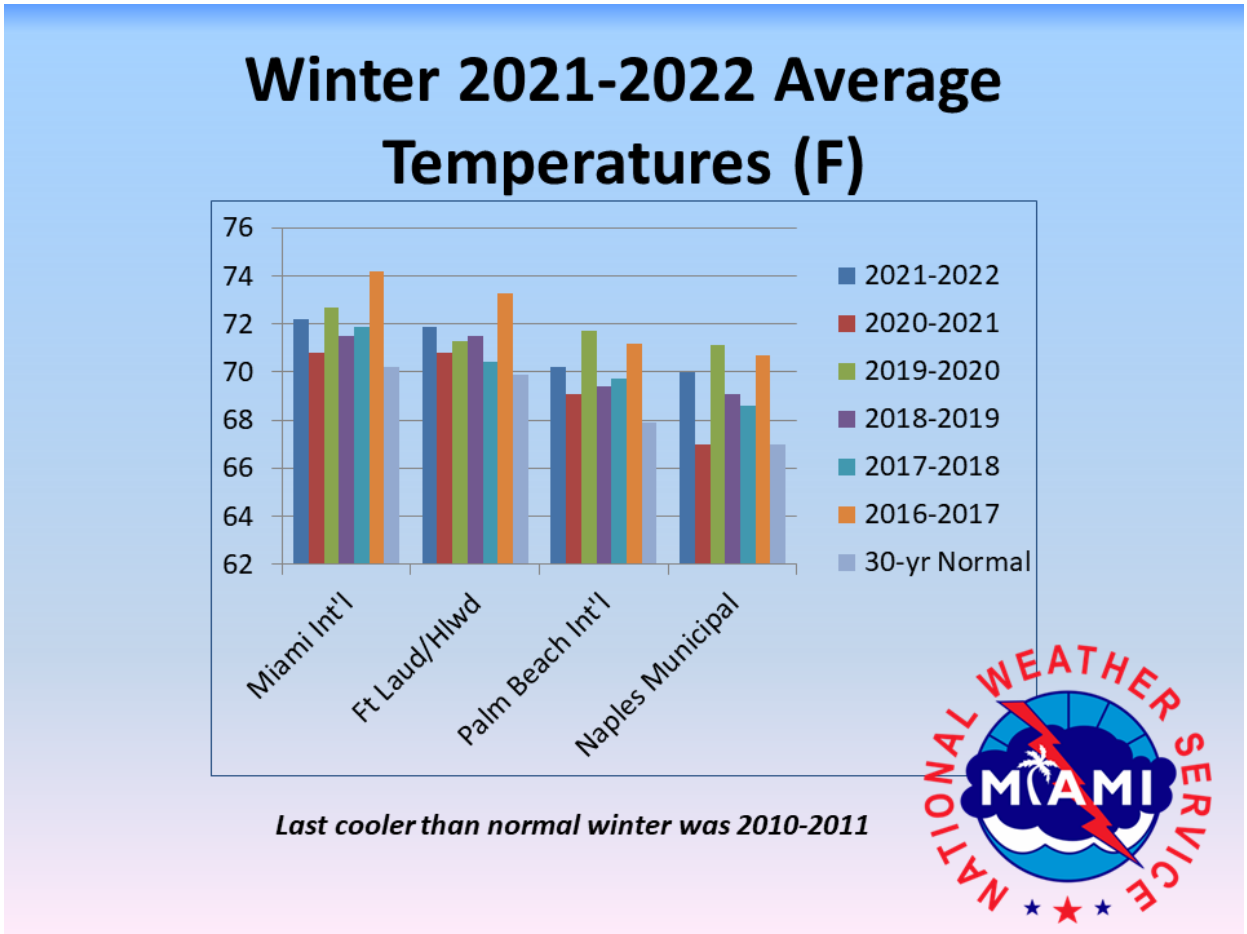


Figure 2: Average winter temperatures 2016-2022 for main South Florida climate sites

The coldest period was between January 14-31, with a series of cold fronts bringing below normal temperatures for most of this time frame. Lows in the 30s and 40s were registered on the 23rd through the 25th, followed a few days later by the lowest temperatures of the winter occurred in association with a strong cold front and arctic air intrusion on January 29-31. The coldest temperatures in a decade were recorded over parts of interior Southwest Florida, where low temperatures on the 30th dropped into the mid to upper 20s and an official low of 28F recorded at the NWS cooperative station in Ortona in Glades County. Temperatures were in the 30s most everywhere else, except near 40 over the Miami-Fort Lauderdale urban corridor. Temperatures were similar to perhaps a couple of degrees higher on the morning of the 31st, however widespread frost occurred over interior areas. Some crops sustained damage as a result of the freezing temperatures and frost.

The last of the winter cold fronts moved through South Florida near Valentine's Day, and after a couple of cool days temperatures soared into the 80s on an almost daily basis to end February.

No "cool days" were recorded in December, and only a couple in February. As a result, the number of such days decreased compared to last winter (Figure 3), while conversely increasing the number of "warm days" (Figure 4).

Below are graphics with additional temperature data for the four main climate sites in South Florida:

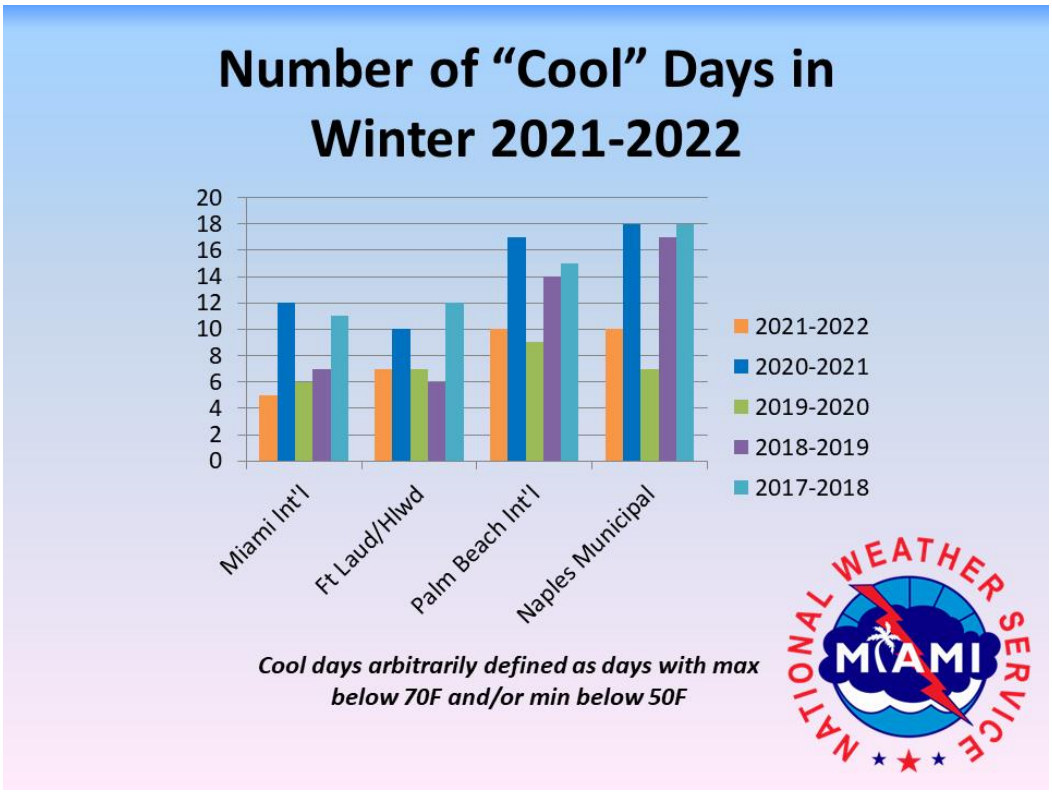


Figure 3: Number of days of sub-70F degree highs and/or sub-50F degree lows.

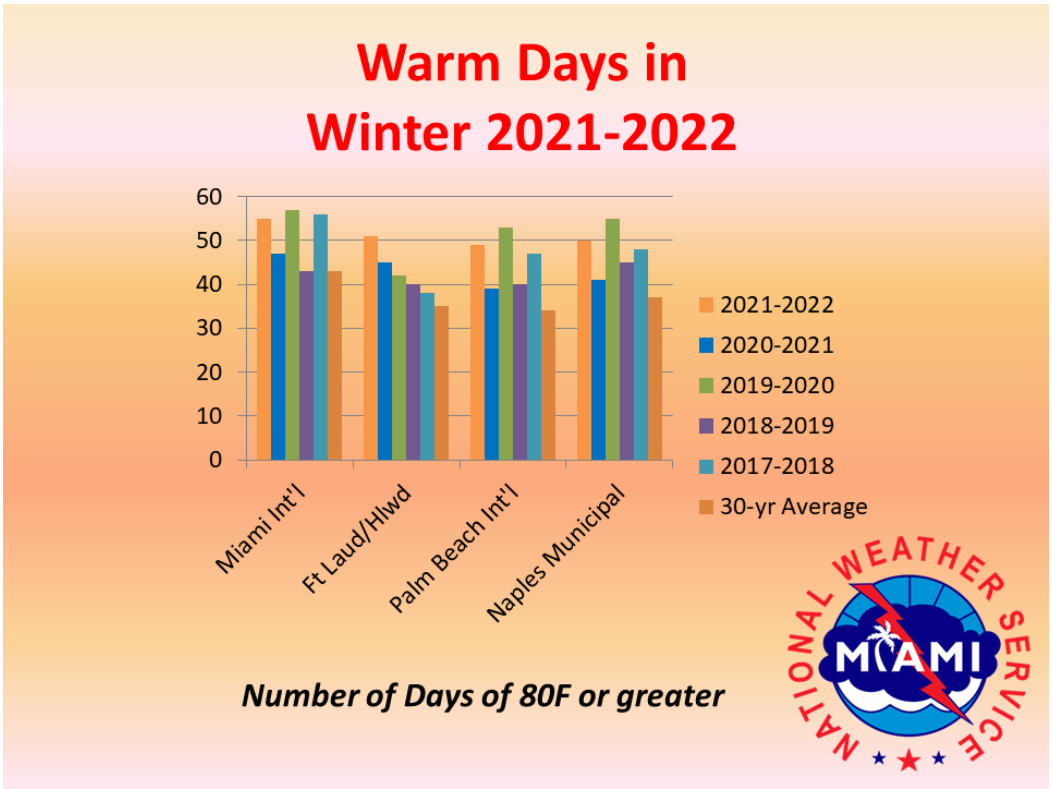


Figure 4: Number of days greater than or equal to 80 degrees F

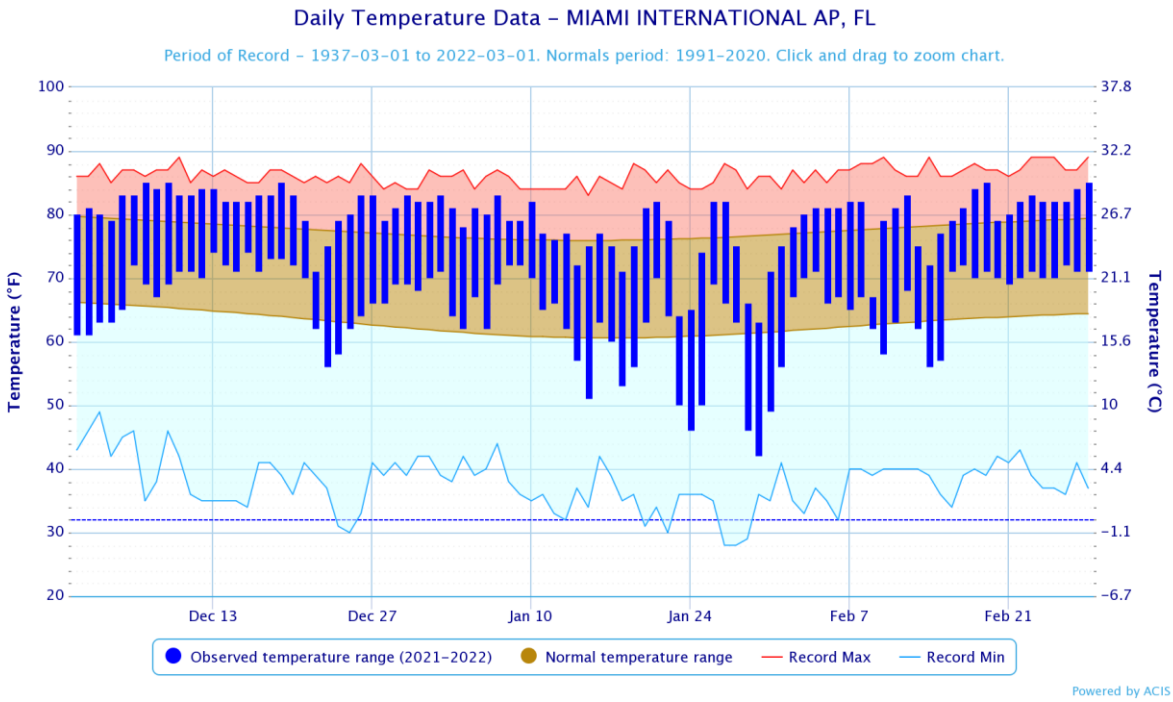


Figure 5: Daily temperature data for Miami International Airport for December 2021- February 2022. This is representative of winter temperature trends at all South Florida locations

Here are average December 2021-February 2022 temperatures, departure from normal in degrees F and ranking for the four main South Florida climate sites:

Location (beginning of period of historical record)	**Dec 2021-Feb 2022 Avg Temp**	**Departure from Normal (F)**	**Top 25 Rank**
Miami (1911)	72.2	+2.0	8th warmest
Fort Lauderdale (1912)	71.9	+2.0	7th warmest
West Palm Beach (1888)	70.2	+2.3	15th warmest
Naples (1942)	70.0	+3.0	5th warmest

Other noteworthy statistics and data:

- **Miami International Airport**: The highest temperature recorded was 85 degrees set on December 7th, December 9th, December 19th, February 19th, and February 28th, and the lowest temperature recorded was 42 degrees on January 30th. The temperature reached or exceeded 80 degrees on **55 days**, well above the average of 43 days. The number of days below 50 degrees was **4** which is below the 30-year average of 6 days.

- **Palm Beach International Airport**: The highest temperature recorded was 86 degrees on February 18th, and the lowest temperature recorded was 37 degrees on January 30th.

The temperature reached or exceeded 80 degrees on **49 days**, which is well above the average of 34 days. The number of days below 50 degrees was **8** which is well below the 30-year average of 14 days.

- **Fort Lauderdale/Hollywood International Airport**: The highest temperature recorded was 85 degrees on December 19th, February 18th, and February 19th, and the lowest temperature recorded was 40 degrees on January 30th. The temperature reached or exceeded 80 degrees on **51 days**, well above the average of 35 days. The number of days below 50 degrees was **5** which is below the 30-year average of 8.

- **Naples Municipal Airport**: The highest temperature recorded was 88 degrees on February 17th and February 24th, and the lowest temperature recorded was 37 degrees on January 30th. The temperature reached or exceeded 80 degrees on **50 days**, well above the average of 37 days. The number of days below 50 degrees was **7** which is well below the 30-year average of 17.

Precipitation

There was a pronounced difference in the winter 2021-2022 precipitation patterns across southern Florida (Figures 6 & 7). Above normal rainfall occurred over metro SE Florida, primarily from Lake Worth to Miami, with rainfall totals of 8-12 inches over this area and isolated totals around 15 inches. This was about 2 to 4 inches above normal, with a few spots as much as 4-8 inches above normal.

On the other hand, areas west of metro SE Florida, northern Palm Beach County, and all of SW Florida had below normal precipitation. Rainfall totals were in the 2-4 inch range in these areas, with parts of Glades and Collier counties receiving less than 2 inches. This resulted in values of around 2 to 4 inches below normal, with the drier locations receiving only about 25 percent of the normal winter rainfall. As a result, most of Southwest Florida has been designated as abnormally dry as of the end of February.

The higher rainfall amounts in SE Florida were mostly from moist east winds in the vicinity of fronts either stalling over the area or returning northward. Over half of the total winter rainfall at Fort Lauderdale/Hollywood International Airport occurred on just two days, December 6th and January 20th, from these type of weather systems. Localized flooding occurred in the Lake Worth area on December 19th, near Downtown Miami on January 11th, and in Fort Lauderdale on January 20th.

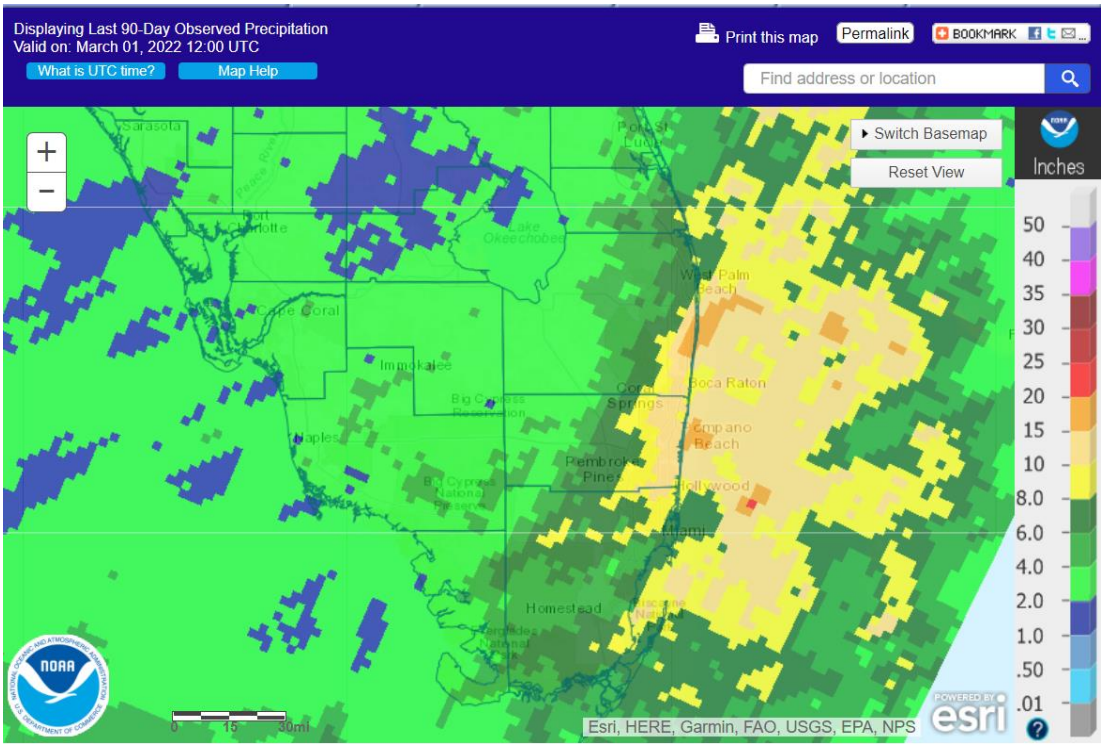


Figure 6: Observed Precipitation for Winter 2021-2022

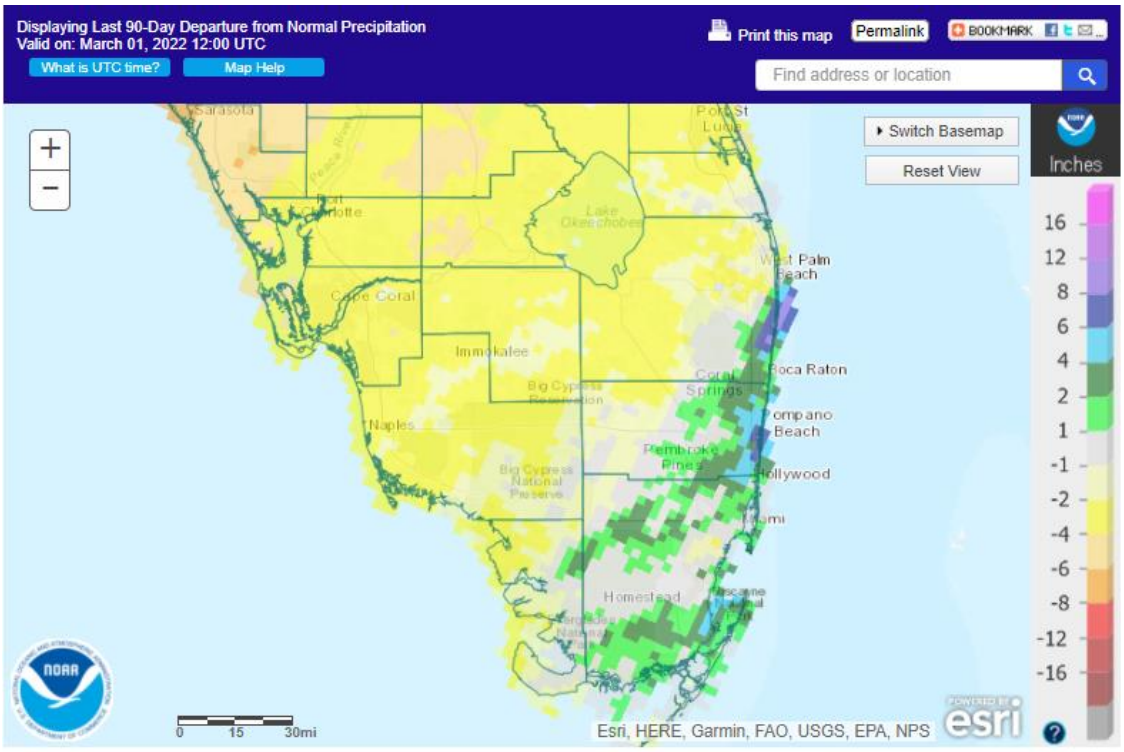


Figure 7: Departure from Normal Precipitation for Winter 2021-2022

Following are December 2021-February 2022 rainfall totals, departure from normal in inches and ranking for selected locations:

Location (Beginning of Period of Record)	Dec 2021-Feb 2022 Rainfall (inches)	Departure from Normal	Top 20 Rank
Cape Florida (1998)	**10.69**	**+4.01**	
Fort Lauderdale/Hollywood Int'l (1912)	**11.40**	**+3.34**	**18th Wettest**
Fort Lauderdale Exec. Airport (1998)	**11.61**	**+4.49**	
Fort Lauderdale Dixie Water Plant	**10.35**	**+2.01**	
Marco Island (2002)	**1.46**	**-4.66**	
Miami International Airport (1895)	**8.77**	**+2.35**	
Muse (2009)	**2.34**	**-4.06**	
Naples Municipal Airport (1942)	**2.15**	**-2.25**	**14th Driest**
NWS Miami (1999)	**8.45**	**+1.83**	
Opa-Locka Airport (1998)	**7.60**	**+0.96**	
Palm Beach Gardens (2002)	**9.70**	**-0.08**	
Palm Beach International Airport (1888)	**6.40**	**-3.18**	
Pembroke Pines North Perry Apt (1999)	**9.21**	**+1.49**	
Pompano Beach Airpark	**7.99**	**+1.60**	
The Redland (1942)	**5.59**	**-0.97**	
West Kendall/Miami Exec. Airport	**3.32**	**-2.66**	

Severe Thunderstorms/Tornadoes

The most active severe weather day was on January 16th when thunderstorms swept across South Florida ahead of a strong cold front. Two EF-0 tornadoes occurred in Collier County (Lely Estates/Alligator Alley and Ochopee), and winds of 40-50 mph swept through most of the area. A weaker system produced gusty thunderstorm winds across parts of South Florida on December 21st.

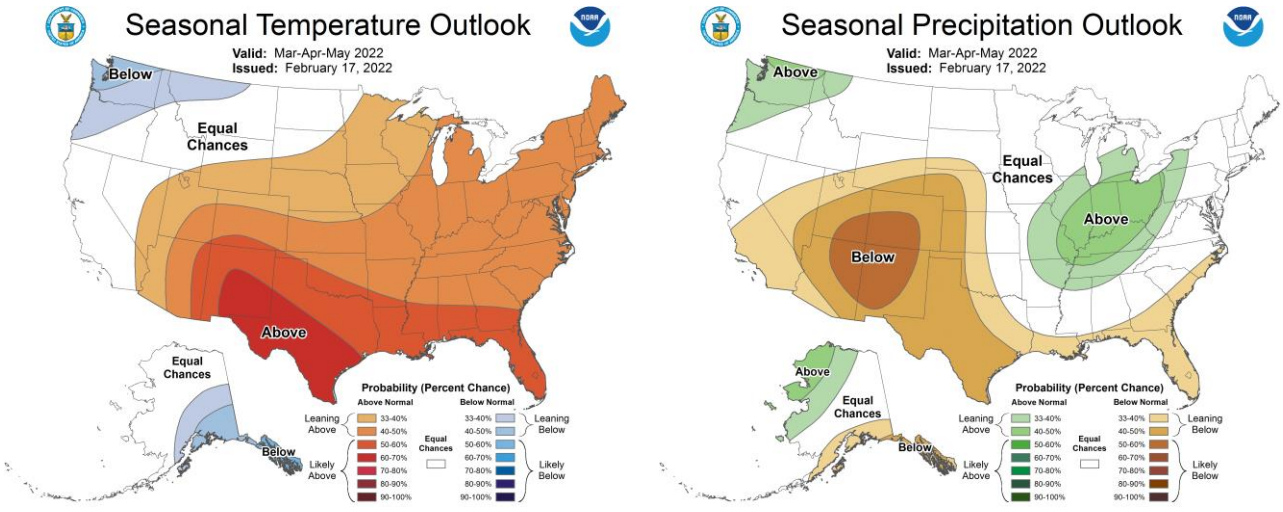
Outlook for March-May

The outlook by the NOAA Climate Prediction Center for the period from March through May (Figures 8 and 9) is for above normal temperatures likely across South Florida, as well as leaning towards below normal precipitation. This is mainly consistent with the general La Niña conditions which have been in place since last fall.

The possibility of a drier than normal spring coupled with the dry conditions over the interior and western areas of South Florida means that drought conditions are likely to develop in the coming weeks, especially as temperatures increase and fuels become dry. The significant wildland fire potential is above normal through May for all of South Florida. All persons are urged to take measures to reduce the chance of wildfires. Visit the Florida Forest Service web site for more information on how to help prevent wildfires.

March and April also bring an increase in easterly winds to the area along with an increase in beach-goers. This significantly increases the risk of rip currents along the east coast beaches. A sharp increase in rip current-related drowning deaths and rescues occurs during the spring months due in part to this shift in the wind patterns and more people in the water. All residents and visitors visiting area beaches are strongly urged to heed the advice of Ocean Rescue lifeguards and swim near a lifeguard. Visit the National Weather Service Rip Current Awareness page for more information.

For the latest south Florida weather information, including the latest watches, advisories and warnings, please visit the National Weather Service Miami Forecast Office's web site at weather.gov/southflorida.



Figures 8 and 9: NOAA Climate Prediction Center outlook for March-May.